



*Time-Of-Flight 3D imaging,  
industrial control and  
automation, security and  
surveillance, gestures  
recognition.*

## RIFERIMENTI E LINK

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## DESCRIPTION

QVGA pixel array based on a buried-channel photo-demodulator pixel for Time-Of-Flight range imaging. The sensor has a pixel pitch of 14  $\mu\text{m}$  with a 48% FF and allows a maximum frame rate of 70 3D fps. Dynamic range extension using multiple-exposure time is possible, achieving a linearity <1.1% and a precision of 2.6 – 16cm on a 0.8m – 7.5m range at an overall frame rate of 8fps.

## SPECIFICATIONS

Sensor		3D Camera System		
Process Technology	CMOS 1P4M 0.18 $\mu\text{m}$ Imaging	Modulation frequency	16.67MHz	
Array Size	320x240	Average modulation current	170mA 390mA	@ 70 fps @ 10 fps
Chip size	5mm x 5mm	Illuminator type	3-LED array 850nm	
Pixel pitch	14 $\mu\text{m}$	Illuminator field of view	$\pm 15^\circ$ FWHM	
Fill Factor	48%	Peak Optical Power	4.3W/sr	
Supply voltage	3.3V for analog 1.8V for digital	Objective	f=2.9 mm, F#=1	
Chip current consumption	73mA from 3.3V 0.1mA from 1.8V	Distance range	0.8m – 7.5m	@ 8 fps
Dynamic Range	59dB	Repeatability ( $\sigma$ )	2.6cm best, 16cm@7.5m	@ 8 fps
Maximum frame rate	280fps for 2D 70fps for 3D	Distance FPN	2.1cm	
Pixel Sensitivity	7.1 V/s-pW	Distance non-linearity	< 1.1%	0.8m – 7.5m range

## ADVANTAGES & APPLICATIONS

- Automation, mechatronics and robotics.
- Microsystems
- Time-Of-Flight 3D imaging
- security and surveillance
- gestures recognition.

## STATUS

- TRL 4 - technology validated in lab.
- Patented technology (EP 2 348 537 B1)
- TOF 3D imaging system demo available